

NON-PUBLIC?: N  
ACCESSION #: 9206160216  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Joseph M. Farley Nuclear Plant - Unit 2 PAGE: 1 OF 4

DOCKET NUMBER: 05000364

TITLE: Reactor Trip On Low Steam Generator Level Coincident With  
Feedwater FLOW Less Than Steam Flow Signal  
EVENT DATE: 05/12/92 LER #: 92-005-00 REPORT DATE: 06/11/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 12

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: R. D. Hill, General Manager - TELEPHONE: (205) 899-5156  
Nuclear Plant

COMPONENT FAILURE DESCRIPTION:  
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:  
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

#### ABSTRACT:

At 1331 on 5-12-92, with the unit in Mode 1 operating at 12 percent reactor power, following a refueling outage, the reactor tripped due to low water level in the 2C steam generator (SG) coincident with a steam flow greater than feed flow signal. The low level in the SG occurred as a result of a transient initiated from a main generator trip that occurred at 1243 on 5-12-92. The main generator tripped due to a generator neutral overcurrent.

Various combinations of rod control, steam dump control, and manual and auto feed regulator bypass valve control were utilized over the 48 minutes following the turbine generator trip in an effort to stabilize SG levels. Despite the attempts to regain automatic SG level control, SG 2C level dropped to 25 percent at 1331 on 5-12-92, resulting in a reactor trip.

The reactor trip was caused by personnel error in that the control room crew did not dampen the SG level oscillations with a more restrictive 2C SG low level trip setpoint (25 percent versus 17 percent) imposed by a feedwater flow transmitter being in test.

To prevent recurrence, a critique was conducted with the Shift Supervisor and the plant operators on duty at the time of the trip. Data from the transient were evaluated and the control room crew and the oncoming crews were reinstructed, prior to assuming control room responsibilities, on options available when SG level control cannot be maintained in automatic.

The unit returned to power operation on 5-14-92 at 0822.

END OF ABSTRACT

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#### Plant and System Identification

Westinghouse - Pressurized Water Reactor  
Energy Industry Identification System codes are identified in the text as XX!.

#### Summary of Event

At 1331 on 5-12-92, with the unit in Mode 1 operating at 12 percent reactor power, following a refueling outage, the reactor tripped due to low water level in the 2C steam generator AB! (SG) coincident with feedwater flow less than steam flow signal. The low level in the SG occurred because of a transient induced from the main generator trip that occurred at 1243 on 5-12-92. The main generator tripped due to a generator neutral overcurrent. The reactor trip was caused by personnel error in that the control room crew did not dampen steam generator level oscillations.

#### Description of Event

At 1243 on 5-12-92, while operating at approximately 16 percent reactor power, the turbine generator tripped due to a main generator neutral overcurrent. The problem was later identified as a ground in the isophase bus duct cooling system.

With no decay heat at the beginning of life, combined with steam dump demand being very low and a positive moderator temperature coefficient,

SG level control began to oscillate. Rod control was utilized in manual to control RCS temperature. But temperature was also being affected by the varying SG level. It was varying with the changing steam demand by the steam dumps and the varying temperature.

In order to enhance SG level control following the turbine generator trip, dedicated operators were assigned to feedwater and rod control. An additional operator was assigned to handle all other control room functions. The Shift Supervisor maintained continuous visual and verbal communication with the feedwater operator and the rod control operator throughout the event. It was recognized that the bistables which were in the tripped condition for work on feedwater flow transmitter FT-496 had enabled a more restrictive (25 percent vice 17 percent) SG level reactor trip.

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The Shift Supervisor considered reducing power in order to control SG level with the auxiliary feedwater system. He also considered a manual reactor trip, but believed throughout the event that SG level was being controlled and that progress was being made toward stabilizing level and temperature. The Shift Supervisor requested that I&C restore FT-496 to service expeditiously. I&C completed their work about 40 minutes into the event, but too late to return the bistable to service prior to the trip.

During the time from the turbine generator trip to the reactor trip, the operating crew had positive indication of the recovery of SG level by the fact that on several occasions all three SG level control valves had been able to be returned to automatic control. However, with the steam dump oscillating, SG level oscillations would periodically start. The plant operator waited too long to take manual control of the 2C SG level control valves to stop the last oscillation and the 2C SG level reached 25 percent at 1331 on 5-12-92. The reactor tripped due to low water level in the 2C SG coincident with a feedwater flow less than steam flow signal.

Following the trip, the operators implemented FNP-2-EEP-0 (Reactor Trip or Safety Injection). FNP-2-ESP-0.1 (Reactor Trip Response) was entered following completion of FNP-2-EEP-0. The unit was maintained in a stable condition.

#### Cause of Event

The reactor trip was caused by personnel error in that the control room crew did not dampen the steam generator level oscillations within the

more restrictive operating band imposed by the feedwater flow transmitter being in test.

#### Reportability Analysis and Safety Assessment

The event is reportable because of the actuation of the reactor protection system. After the trip, the following safety systems operated as designed:

- main feedwater was isolated with flow control valves and bypass valves closed
- auxiliary feedwater pumps started automatically and provided flow to the steam generators
- source range nuclear instrumentation automatically energized
- pressurizer heaters and spray valves operated automatically as required to maintain reactor coolant system pressure

There was no effect on the health and safety of the public.

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#### Corrective Action

To prevent recurrence, a critique was conducted with the Shift Supervisor and the plant operators on duty at the time of the trip. Data from the transient were evaluated and the control room crew and the oncoming crews were reinstructed, prior to assuming control room responsibilities, on the following options available when SG level control cannot be maintained in automatic:

- a. reduction of power such that SG level can be maintained by the auxiliary feedwater system
- b. manual reactor trip
- c. adjusting reactor power to increase steam dump demand such that steadier steam dump operation is obtained

#### Additional Information

The unit returned to power operation on 5-14-92 at 0822.

No similar LERs have been submitted by Farley Nuclear Plant.

This event would not have been more severe if it had occurred under

different operating conditions.

ATTACHMENT 1 TO 9206160216 PAGE 1 OF 1

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Southern Nuclear Operating Company  
J. D. Woodard  
Vice President the southern electric system  
Farley Project June 11, 1992

10 CFR 50.73

Docket No. 50-364

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Joseph M. Farley Nuclear Plant - Unit 2  
Licensee Event Report No. LER 92-005-00

Gentlemen:

Joseph M. Farley Nuclear Plant, Unit 2, Licensee Event Report No. LER 92-005-00 is being submitted in accordance with 10 CFR 50.73. If you have any questions, please advise.

Respectfully submitted,

J. D. Woodard

JDW/EFB:map 2581

Enclosure

cc: Mr. S. D. Ebnetter  
Mr. G. F. Maxwell

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